INFORMATION LINK

Information Technology Department

January 2000 | A source of information for our customers | Volume 100, Issue 1

Software Development Services

JAVA

Vern Welder

Java is a relatively new programming language that was originally marketed by Sun Microsystems about 4 years ago. Java's strongest trait is its portability. Sun's vision is for Java applications to run on any computer platform without modification. That means a Java object written and compiled on any computer could run on a UNIX, MacIntosh, Windows, IBM mainframe, Palm Pilot, etc. platform without modification.

The Information Technology Department's (ITD) current focus for using Java is web-based applications and interfaces between software products/systems that support Java. Our short-term plans are to 1) create web browser interface for the Human Services TEEM application which currently uses a Cool:Gen client interface; 2) support SilverStream application development which generates Java code; and 3) create Java interfaces between application systems and vendor software. Our long-term vision is to have most of our programming done in Java.

SOFTWARE PRESENTATION

Vern Welder

On November 16, ITD Software Development Division hosted a presentation of software development tools we use for client/server and web development. For those who missed the presentation, you can view the presentation slides and connect to the discussion database from the ITD Software Development home page at URL http://state.nd.us/itd/devel/develhome.html

PC SHOW AND TELL

Puzzled how to do a task or action with your software or even on the Internet?

Check out http://www.pcshowandtell.com if you are looking for a good, how-to-do-it resource web site for computer help.

PC Show and Tell will guide you through the answer, step-by-step, while you actually see and hear how to do it.

Administrative Services

SEVERAL OFFICES IN THE INFORMATION TECHNOLOGY DEPARTMENT MOVE

If you have been in the ground floor office of the Information Technology Department (ITD) or on the first floor of the Judicial Wing in the last couple months, you may have noticed a lot of activity.

The administrative offices of ITD have moved from ground floor to room 103 on the first floor of the Judicial Wing.

Tech Services has moved from the basement of the Department of Transportation Building to room 115 on the first floor of the Judicial Wing.

IMAGING OPPORTUNITIES

Bill Roach

Many organizations in the public and private sector have considered using imaging within their organization. Information access, disaster recovery, customer service, information portability, and space savings are often given as reasons for considering the technology. Many organizations have had considerable success with systems implemented solely on these rudimentary uses. However, the real power of imaging is in its use as an enabling technology.

Imaging is not a new technology. It was developed in the early eighties as an efficient method to rapidly move information. As one of the first office automation tools, fax machines captured images of documents and transmitted them across phone lines to a second fax machine. The incoming image was printed for distribution. Because of the need for fax machines around the world to communicate with one another, international standards for the image formats were developed almost immediately (ISO TIFF G3). As the technology matured, additional uses and standards were developed for imaging technology (ISO TIFF G4).

Imaging should be considered as a core technology for automating business processes. Imaging converts paper documents into electronic files. Images can be created using scanners, fax machines, or electronic systems. Once an image has been created and enhanced, the electronic file can be processed, reviewed, verified, stored, tracked, distributed, and retrieved automatically.

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Forms can be mapped and data extracted using Optical or Intelligent Character Recognition (OCR/ICR). Barcodes and check boxes can be read using Barcode or Mark Sense Recognition (OMR/MSR). Accuracy of processed data is assured through the use of multiple processing engines, algorithmic comparisons, and internal and external verifications. Questionable information can be automatically routed to verifiers who use image snippets for verification. Physical and other signatures and comments can be captured and stored as links to captured data. Form backgrounds and instructions can be eliminated and templates used for viewing and printing to reduce storage requirements and limit network impacts. Images can be stored and accessed from a variety of systems using links created during processing. Data can be ported into existing applications at a speed and accuracy unmatched by traditional data entry methods.

Correspondence, reference files, and historical documents can be converted to text and searched using powerful search tools. Information can be copied and pasted into new applications. Information can be faxed, e-mailed, printed, or posted to the Web.

Mass storage technologies can retain millions of pages of images with nearly instant retrieval. Extensive security systems prevent unauthorized access or disclosure of sensitive or confidential information. Information is available to remote locations using existing infrastructures. Images can be written to archival microfilm for historical purposes.

Together these technologies can:

- Improve the speed of information processing.
- Improve the accuracy of information capture.
- Improve access to information.
- Virtually eliminate lost records and documents.

Imaging by itself can be a very effective technology. When used as a portal to automate information processing, it is unbeatable.

BILLING RATE CHANGES

The Information Technology Department (ITD) is constantly looking at ways to provide our services for less money without reducing the quality of the finished product. In October of 1999, the rate for LAN Backup Storage was reduced from 5 cents per MB to 3 cents per MB. Based on current usage, this will result in a total savings to state agencies of $9,600 each month. In addition, ITD reduced the rates for Batch CPU, CICS CPU, Adabas CPU, and TSO CPU from 98 cents per second to 95 cents per second effective November 1999. This reduction will save state agencies $402,000 for the remaining 1999-2001 biennium.

Current ITD billing rates may be found on the ITD web site (http://www.state.nd.us/itd). Select the Rates link within the Administration link and you will find a current listing of all ITD billing rates. If you have any questions, contact me at dsipes@state.nd.us or 328-4317.

Telecommunication Services

HEAT PROBLEM TRACKING SOFTWARE TO BE AVAILABLE VIA THE WEB

Cindy Kemmet

The Information Technology Department (ITD) is working to bring HeatWeb, our problem tracking software, up on the Web. The HeatWeb product will be running on its own Web Server. ITD's goal is to have the HeatWeb product configured and available to our customers sometime during the first quarter of the new year. There are many design and customization issues to address during the development of this product.

Support Center Statistics

ITD has 4 full time Customer Technical Support Specialist at the Support Center dedicated to taking your calls, plus performing other administrative duties. The following statistics are average for a month:

- Answer 2,198 calls from customers.
- Respond to 29 after-hours customer calls.
- Complete 296 IP addressing requests.
- Complete 117 terminal/printer access requests.
- Set up 6 interactive video conferences.

Problems reported to ITD at the Support Center are concentrated in 4 main areas: Network Communications, Voice, Desktop Support, and E-Mail issues. At any given time there are an average of 40 open problems in our tracking system that are assigned and being addressed by the various sections of ITD. If you have questions on this or any of the services we provide, please contact me at ckemmet@state.nd.us or 328-3003.

DYNAMIC HOST CONTROL PROTOCOL (DHCP) EASES IP ADDRESS MANAGEMENT

Jeff Carr

Maintaining each and every computer's Internet Protocol (IP) configuration is one of the more odious tasks facing any network manager. Every computer needs its own IP, Netmask, Gateway, Domain

ITD EMPLOYEE PROFILE

Name: Kevin Hertz
Job Title: Programmer/Analyst III
Section of ITD: Application Development
Job Responsibilities: Maintain and enhance the Object Module Knowledge Base (SNAP) and client/server code (CoolGen). Answer user questions about the TEEM System rules and functionality.
Years at ITD: 11 years

Name Server (DNS), and Windows Internet Naming Service (WINS) address configured correctly. A machine that has an incorrect value for any one of these configuration settings will not function properly and in fact, may not function at all. While it is possible to enter these settings manually for every machine, this approach quickly presents the person responsible for maintaining these computers with a daunting task. If one or more of these configuration settings change (e.g. the addresses of the DNS servers), the network manager must visit every machine to reconfigure the machine with the new values.

DHCP offers a way to eliminate this network management burden. DHCP is a protocol through which computers contact a central server and obtain the currently correct values for each of these IP configuration settings. If, for example, the IP addresses of the DNS servers change, computers using DHCP will be automatically informed of the change and will require **no** manual reconfiguration. The reduction of the network management burden is clear.

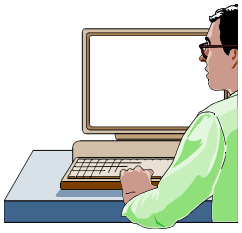
ITD offers DHCP services and we are actively encouraging everyone to take advantage of this service. Both ITD and the Legislative Council have used the DHCP service for the past year and Job Service has been using ITD's DHCP service state wide for the last 6 months. The task of managing more than 5 or 10 computers without using DHCP and the burden of visiting each and every machine to manually reconfigure IP settings is simply too large.

There are two ways in which DHCP can be configured for an individual computer. In the first method, known as Static DHCP, an individual computer is guaranteed that it will have a constant or Static IP address. This method is appropriate for machines that have a server function and need a constant, known IP address. However, this Static DHCP option does come with a one-time management burden. Setting aside that single, Static IP address for the private use of one machine requires that the DHCP server know the MAC, or hardware, address of the network card in that particular machine. Therefore, you will need to provide ITD with the MAC addresses of the machines that will use Static DHCP (e.g. your servers). It is important to note that this must be done only once for each machine.

The second method in which DHCP may be used is known as Dynamic DHCP and is appropriate for workstations. For example, the machine on which I am writing this article does not need a Static IP address, it simply needs an IP configuration that will work, and it obtains that working configuration via Dynamic DHCP. The advantage of this option lies in removing the need to provide ITD with the MAC address of these workstation machines. You simply plug the machine into the network and the machine uses DHCP to obtain a working IP configuration. Therefore, for machines that are configured to use Dynamic DHCP, there is no need to provide ITD with any information to obtain a working IP address.

DHCP can greatly reduce the time you spend managing IP addresses. Moreover, when a change occurs, such as a change in DNS server IP addresses, you do not need to reconfigure any of your computers – they will use DHCP to obtain the new IP configuration without any intervention from you.

If you are interested in finding out more about DHCP, please contact me at jcarr@state.nd.us or 328-1034.



Information Technology

COPYRIGHT LAW AND THE WEB

Phil 'Boris' Miller

The World Wide Web has opened up a whole new medium for authoring documents and distributing them publicly. Anyone with a personal computer can easily develop a web page and have it published on the Internet for free. This capability empowers the masses with a tool they never had before. With the right to use it, also comes the duty to understand and follow copyright laws, like any other responsible publisher.

Copyright is the legal right of the author or other owner of an original work to control the reproduction, distribution, and sale of that work. There are no special laws regarding the Web. The Web is simply another medium, like a magazine or a book. The problem with the Web is that material from it can be so easily copied and reproduced. A few clicks of the mouse can make a criminal out of an otherwise ordinary, law-abiding citizen in a matter of seconds.

Many believe that all material on the Web is free simply by virtue of being there. While some things such as free software or "freeware" may be free, they are free because the author has given that permission. Without that permission, a web user usually has no right to copy it. Sending a web page to the printer is a form of copying no different from laying a page of a book on the glass of a copy machine and pressing the print button. Both are covered by the same copyright protections.

Copyright begins the moment the work is put on a web page, electronic file, or any printed copy. It may not have a copyright notice on the page, but a copyright does exist. Almost all work found on the Internet and created after March 1, 1989 is copyrighted.

The webmaster would be the first person to contact to find out about copyright issues for a particular work. There is usually an e-mail address of the webmaster found somewhere on every home page. Caution must be used, however, as the webmaster may have posted the material illegally and may not have the right to give permission to others. Links to other sites are okay if the link takes the user directly to the linked site.

BUSINESS ETIQUETTE

According to a University of Southern California study, 55% of what you present is communicated by how you look, while 38% is communicated by how you say it (tone or pitch), and only 7% is communicated by the actual words you choose.

Your image is just one area of business etiquette. Keep reading to determine if you are minding your manners.

Body Language

- Make eye contact.
- Don't put your hands above your shoulders, behind your back, under the table, in your pockets, or across your chest.

Introductions

- Always stand up when meeting someone.
- When making introductions, say the name of the person with the most authority first. For example, customer to vice president or vice president to new employee.
- Always shake hands firmly.
- If using titles in an introduction, use the title first and then the person's name. The name will be remembered.
- Wear your name tag on the right side.

Telephone Etiquette

- Use a friendly greeting.
- Return calls within 24 hours. Even if you don't have the information, the caller will know you are working on it.
- Always include your telephone number when leaving a message.
- If you are using a speakerphone, let the callers know and introduce everyone on the call. Speakerphones are intended for conference calls where many individuals need to be involved in the conversation.
- When you are away from the office for a day or more, change your voice mail message so people will know why you have not returned their call.

INFORMATION LINK is published quarterly by the North Dakota Information Technology Department.

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